On the Star No. 894 Greenwich First Seven Year Catalogue.

By M. A. Wagner.

(*Communicated by the Astronomer Royal.*)

In his paper on the supposed transneptunian planets Professor Forbes refers to the star No. 894 of the Greenwich Seven Year Catalogue which he thinks might have been one of the hypothetical planets. The star has been observed twice in 1857, April 15 and 16. The results of the individual observations are:—

	App. A.R.			App. N.P.D.			Mean A.R. and N.P.D. 1857·0.	
	h	m	s	°	′	″	s	″
Apr. 15	11	19	6·74	85	2	35·41	4·95	26·16
·16			6·99			32·86	5·21	23·64

The difference between the two observations is not greater than is consistent with the note "very faint," added to the second observation. If, indeed, these two observations have belonged to a planet moving in an orbit with a mean distance of 100, and a time of revolution of 1,000 years the Right Ascension of the object ought to have diminished by about $1^s{\cdot}6$, and the N.P.D. to have increased by a number of seconds. Hence it appears that these observations cannot belong to a planet.

It might be inferred from Professor Forbes' remark that the alleged star is now wanting in the heavens, and, indeed, there is no star to be found at this place in the *Bonner Durchmusterung*. But the *Durchmusterung* is complete only to the ninth magnitude, and a star designated as "very faint" in the Greenwich Transit Circle probably will be of a less magnitude.

Our 6-inch refractor, however, and the heliometer show the star in its proper place. It is perhaps a little less than tenth magnitude. By comparing it with the two stars W. XI. 233 = Schj. 4117 and W. XI. 258 = Schj. $412\frac{6}{7}$, I deduced from observations of May 5 its mean position 1880·0—

h	m	s		°	′	″
$\alpha = 11$	20	16·2	$\delta = +$	4	49	58

The Greenwich position from the Seven Year Catalogue reduced to 1880·0, gives—

h	m	s		°	′	″
$\alpha = 11$	20	16·20	$\delta = +$	4	50	1·4

In the *Atlas Ecliptique de l'Observatoire de Paris* this star also seems to exist, although a little misplaced. The map for 1852·5 has a star of the eleventh magnitude in $11^h\ 18^m\ 56^s + 5°\ 3'$, which reduced to 1880·0 gives $11^h\ 20^m\ 21^s + 4°\ 54'$, but in this declination there is no star; the general configuration, how-

ever, agrees very well with the heaven. Therefore, if the original entries of the Greenwich Observatory do not state expressly that the star was brighter than tenth magnitude on April 15, 1857, there seems to be no reason for supposing it a variable star.

Pulkowa, 1880, *May* 12.

Coincidence of Sun-spots and Auroræ in Olden Time.

By the Rev. S. J. Johnson.

As with a slowly increasing number of Sun-spots at the present time we may assume the return of fine auroral displays to be drawing near, it may not be devoid of interest to examine what coincidence may be traced between the auroræ seen in this land by our forefathers and the few recorded instances we have of Sun-spots in early times. Meagre though our data may be, it is by no means difficult to trace this coincidence. The ease with which this may be done is more remarkable from the fact that, according to Wolf's tables, there are instances laid down of sixteen years between the assumed maxima of solar spots, and at other times less than half this period.

In a communication to *Nature*, January 13, 1870, an endeavour was made to show that the epochs at which Sun-spots were seen before the invention of the telescope were coincident with the maximum periods of the Sun-spot cycle. Thus it was remarked—

From	321	A.D. to	1860	we have	139	periods of	11·072 +	years each
„	321	„	807	„	44	„	11·045	„
„	807·22	„	840·5	„	3	„	11·093	„
„	840·5	„	1096	„	23	„	11·109	„
„	1096	„	1161	„	6	„	10·833	„

But a great number of spots are on record, chiefly in China, as seen with the naked eye, in addition to those mentioned in the said article.

The first instance in our own country occurs less than twenty years after the first recorded eclipse, being the mention by Matthew of Westminster of "fiery lances in the air," in the year 555. The Chinese do not record spots close to this date, but in 577, which would give two periods of eleven years each.

The following instances will be found in the *Chronicon Scotorum* and the *Anglo-Saxon Chronicle*.

A.D. 660. "In the summer, the sky was seen to burn." *Chronicon Scotorum.*

Employing the data above referred to, it will be seen that from 660